Areas of Expertise

- Seismic Evaluation and Design of Structures
- Seismic Design Provisions in Building Codes.

Education

E.C.E. (1979), Professional Engineers Degree, Structural Engineering, University of Southern California.

B.S. (1959) and M.S. (1960), Civil Engineering, California Institute of Technology.

Registration

Civil Engineer: California, 1965 #16042

Structural Engineer: California, 1971 #1631

Citizenship

United States

Countries Worked In

United States, Japan, Turkey

Language Proficiency

English

REPRESENTATIVE EXPERIENCE

Fifteen years with URS. Serves as Consultant, Principal Investigator, and Project Manager for projects which require structural analysis, structural design, and development of structural/seismic design criteria for government, industrial, and institutional facilities. Mr. Porush has achieved nationwide recognition for this work in the development of building code seismic provisions.

Professional History

- Managed / performed preliminary / conceptual structural design of mat foundation for power plant in Mexicali, Mexico for AEP Resources, Inc. of Columbus, Ohio. Project consisted of preliminary gravity and seismic design of thick mat foundation. The foundation was sized to resist forces due to gravity, seismic shaking, and fault rupture. Analysis of the mat was performed using finite element computer software, assuming that the mat was supported on individual "Winkler" type linear springs at each node in the model.
- Performed / managed the seismic evaluation of critical equipment, piping and support structures at the Ultramar Diamond Shamrock Refinery in Wilmington, California. These were items which contained or supported containers of chemically hazardous materials or explosive materials. This study was the seismic component of a submittal to the City of Los Angeles made in compliance with the state's CalARP program.
- Project Manager/Lead Consultant: SB 1953 seismic evaluations of six Scripps Health campuses in San Diego area. These are Scripps Mercy Hospital, San Diego; Scripps Memorial Hospital, La Jolla; Scripps Hospital East County; Scripps Memorial Hospital, Chula Vista; Scripps Memorial Hospital, Encinitas; Green Hospital, La Jolla.
- Lead Consultant/Project Manager: SB 1953 seismic evaluations of two campuses of hospitals for the Palomar-Pomerado Health System. These

are the Palomar Hospital in Escondido and the Pomerado Hospital in Poway, California.

- Managed / performed seismic risk study of the Water System of the City of Monterey Park, California. Served as Project Manager and also as Lead Structural Engineer for the evaluation of the seismic vulnerability of structures, building and equipment in the Water System. Coordinated efforts of six other disciplines to achieve an integrated risk study with a focused set of recommendations for measures to mitigate the observed seismic risk to the City's Water System.
- Performed / Managed the seismic evaluation of the chlorination equipment, structures and systems at six Metropolitan Water District water filtration facilities in Southern California. This study was the seismic component of a submittal which was performed for compliance with the state's CalARP program.
- Structural Project Manager: Managed/performed study for structural/seismic evaluation and conceptual retrofit design of five structures for the Water Department in the City of Portland, Oregon.
- Project Manager: State of California Division of State Architect: Performed seismic risk evaluations and developed conceptual rehabilitation schemes of 8 buildings, including the main State Office Building in downtown Los Angeles and six state hospital buildings.
- Project Manager, California State University Northridge: Provided forensic engineering services to California State University System investigating the failure of the California State Northridge Parking Structures following the 1994 Northridge Earthquake.
- Project Manager / Lead Consultant: Managed/ performed study for seismic evaluation and conceptual retrofit design of historical Oregon State Library Building in Salem, Oregon.
- Lead Consultant: Managed/performed studies for structural/seismic evaluations of fifteen office and manufacturing buildings for computer chip manufacturer in Hillsborough, Oregon.

- Project Manager / Lead Consultant; seismic upgrade of Building 70, the Flight Simulator Building at McDonnell Douglas Corporation at their Long Beach facility.
- Project Manager/Lead Consultant; seismic upgrade of Building 7, a 1949 vintage 2-story office building for McDonnell Douglas Corporation at their Long Beach facility.
- Lead Consultant: Managed seismic strengthening design of three office and manufacturing buildings for computer chip manufacturer in Hillsborough, Oregon.
- Lead Consultant and Project Manager: Managed/performed study for structural/seismic evaluation of Corporate Headquarters building of Weyerhaeuser Corporation in Federal Way, Washington.
- Lead Consultant and Project Manager: Performed seismic risk study of major oil refinery in Yokohama, Japan for large Japanese Insurance Company.
- Project Manager, Rockwell International, Rocketdyne Division: Manager/performed seismic evaluation and conceptual strengthening design of ten office and manufacturing buildings for Rockwell International's Rocketdyne division.
- Lead Consultant: Managed seismic strengthening design of four Engineering Office Buildings for the Rocketdyne Division of the Boeing Corporation in Canoga Park, California.
- Lead Consultant, Pasadena City Hall: Managed seismic evaluation and conceptual strengthening of Pasadena City Hall, Pasadena, California.
- Project Manager, Burbank/Glendale/Pasadena Airport Authority: Reviewed a three-story parking structure at the Burbank Airport for seismic risk. Provided retrofit design criteria and third party review of final retrofit design.
- Project Manager, Burbank/Glendale/Pasadena Airport Authority: Managed fast-track seismic retrofit design and construction support for

strengthening of main terminal building at Burbank Airport.

- Performed/managed seismic review of structures and equipment (vessels, exchanger, tanks, etc.) in an alkylation unit at Mobil Oil Corporation refinery in Torrance, California.
- Performed/managed seismic risk evaluation of structures and equipment containing hazardous materials at the Keysor-Century Chemical Resins Manufacturing Plant in Saugus, California.
- Performed/managed the seismic risk evaluation of structures and equipment at the Celite Corporation Diatomite Ore Processing facility in Lompoc, California.
- Performed/managed the seismic risk evaluation of structures and equipment containing hazardous materials at the Monsanto Corporation's Phosphate Detergent Plant in Long Beach, California.

Past History

- Twenty-five years past experience in the design of industrial facilities.
- Technical Advisor, Structural Engineering Department, C.F. Braun & Co., Alhambra, California (1960).
- Participated in the design of numerous industrial facilities including oil refineries, chemical plants, nuclear power plants, plutonium processing facilities, research laboratories, and aerospace test facilities.
- Served as structural design engineer, field engineer, structural analyst, structural dynamics analyst, vibration analyst, and project civil engineer while with C.F. Braun & Co.

Affiliations

Structural Engineers Association of Southern California: Past Secretary; Past Director; Past Chairman, Electronic Computation Committee; Past Chairman, Seismology Committee.

Structural Engineers Association of California: Past Chairman, Seismology Committee.

American Concrete Institute: Past Chairman, ACI Committee 351 "Foundations for Equipment and Machinery".

American Society of Civil Engineers

Earthquake Engineering Research Institute

Building Seismic Safety Council: Past Director and Vice Chairman.

PUBLICATIONS

CSUN Parking Structure C – Causes of Failure and Code Issues, co-author, Proceedings, 64th Annual Convention, Structural Engineers Association of California, Indian Wells, California, October 20, 1995.

Co-author, "Cashing in on Performance-based Seismic Engineering: A Case Study", Proceedings of the Structural Engineers Association of California Convention, Maui, Hawaii, 1996.

Co-author, "Interim Guidelines: Evaluation, Repair, Modification and Design of Welded Steel Moment Frames", SAC-95-02/FEMA 267, Chapter 4, Post Earthquake Evaluation, August 1995.

"Building Codes and Seismic Resistant Design", Workshop on Influencing the Next Generation of Seismic Design Practices, 62nd Annual Convention, Structural Engineers Association of California, Ixtapa, Mexico, October, 1992.

Co-author, "A Rational System for Earthquake Risk Management", Proceedings of the 60th Annual Convention, Structural Engineers Association of California, Palm Springs, California, 1991.

"An Overview of Current Building Code Requirements for Nonstructural Elements", ATC-29, Applied Technology Council Seminar and Workshop on Seismic Performance of Nonstructural Elements, Irvine, California, October 3, 1990.

The New 1988 SEAOC Blue Book and UBC -- Overview of Lateral Force Section, Proceedings,

Structures Congress '89, ASCE, San Francisco, California, May 1-5, 1989.

"Current Changes and Future Trends in U.S. Seismic Code Provisions", 9th World Conference on Earthquake Engineering, Tokyo, Japan, August 2-9, 1988.

"SEAOC, The Blue Book and Seismic Codes; Past, Present and Future", Proceedings, 57th Annual Convention, Structural Engineers Association of California, Coronado, California, 1987.

"Overview of the Proposed 1988 UBC Seismic Provisions," Proceedings, National Engineering Conference & Conference of Operating Personnel, American Institute of Steel Construction, New Orleans, Louisiana, April 29-May 2, 1987.

"Proposed Structural Engineers Association of California Definition Procedures for Regular and Irregular Structures", Applied Technology (ATC-15-1), U.S./Japan Workshop on the Improvement of Building Seismic Design and Construction Practices, San Francisco, California, August 1986.

"Criteria Selection for Seismic Design", Proceedings of the 52nd Annual Convention of the Structural Engineers Association of California, Coronado, California, 1983.